

### **In the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. – 24. (Cancelled)

25. (Original) An inspection method for a plasma processing apparatus including a plurality of plasma processing units, each of the plurality of plasma processing units comprising: a plasma processing chamber including an electrode to excite a plasma; a radiofrequency generator to supply radiofrequency power to the electrode; and a matching circuit to match impedances of the plasma processing chamber and the radiofrequency generator, the matching circuit having an input terminal connected to the radiofrequency generator, an output terminal connected to the electrode, and a connection point provided between the input terminal and the output terminal, the matching circuit being connected to a ground potential portion via the connection point,

the method comprising:

inspecting whether a variation  $\langle RA \rangle$  among the plurality of plasma processing units defined by a first equation below is within a first predetermined range:

$$\langle RA \rangle = (RA_{\max} - RA_{\min}) / (RA_{\max} + RA_{\min})$$

where  $RA_{\max}$  and  $RA_{\min}$  are maximum and minimum values, respectively, of AC resistances  $RA$  in the matching circuits of the plurality of plasma processing units measured from an input-terminal-side of the matching circuits; and

inspecting whether a variation  $\langle RB \rangle$  among the plurality of plasma processing units defined by a second equation below is within a second predetermined range:

$$\langle RB \rangle = (RB_{\max} - RB_{\min}) / (RB_{\max} + RB_{\min})$$

where  $RB_{\max}$  and  $RB_{\min}$  are maximum and minimum values, respectively, of AC resistances  $RB$  in the matching circuits of the plurality of plasma processing units

measured from an output-terminal-side of the matching circuits.

26. (Original) The inspection method for a plasma processing apparatus according to Claim 25, wherein the matching circuit is disconnected from the plasma processing unit at the output terminal and at the input terminal, and the AC resistance  $R_A$  is measured at a first measuring point corresponding to the input terminal.

27. (Original) The inspection method for a plasma processing apparatus according to Claim 25, the plasma processing unit further comprising a radiofrequency supplier disposed between the radiofrequency generator and the input terminal of the matching circuit,

wherein the matching circuit is disconnected from the plasma processing unit at the output terminal and at an input end of the radiofrequency supplier, and the AC resistance  $R_A$  is measured at a second measuring point corresponding to the input end of the radiofrequency supplier.

28. (Original) The inspection method for a plasma processing apparatus according to Claim 25, wherein the matching circuit is disconnected from the plasma processing unit at the input terminal and at the output terminal of the matching circuit, and the AC resistance  $R_B$  is measured at a third measuring point corresponding to the output terminal.

29. (Original) The inspection method for a plasma processing apparatus according to Claim 25, the plasma processing unit further comprising a radiofrequency feeder disposed between the output terminal of the matching circuit and the electrode,

wherein the matching circuit is disconnected from the plasma processing unit

at the input terminal of the matching circuit and at an output end of the radiofrequency feeder, and the AC resistance  $R_B$  is measured at a fourth measuring point corresponding to the output end of the radiofrequency feeder.

30. (Original) The inspection method for a plasma processing apparatus according to Claim 25, wherein the AC resistances  $R_A$  and  $R_B$  are values measured at a power frequency of the radiofrequency generator.

31. (Original) The inspection method for a plasma processing apparatus according to Claim 25, wherein both the first and second predetermined ranges are less than 0.5.

32. (Original) The inspection method for a plasma processing apparatus according to Claim 31, wherein both the first and second predetermined ranges are less than 0.4.

33. (Original) The inspection method for a plasma processing apparatus according to Claim 25, the matching circuit further comprising at least one connection point to connect the matching circuit to the ground potential portion, wherein the AC resistances  $R_A$  and  $R_B$  are measured for each of the connection points by sequentially switching the connection points so that only one of the connection points is connected to the ground potential portion.

34. (Original) A inspection method for a plasma processing system including a plurality of plasma processing apparatuses, each of the plasma processing apparatuses including a plurality of plasma processing units, each of the plasma processing units comprising: a plasma processing chamber including an electrode to excite a plasma; a radiofrequency generator to supply radiofrequency power to the

electrode; and

a matching circuit to match impedances of the plasma processing chamber and the radiofrequency generator, the matching circuit having an input terminal connected to the radiofrequency generator, an output terminal connected to the electrode, and a connection point provided between the input terminal and the output terminal, the matching circuit being connected to a ground potential portion via the connection point,

the method comprising:

inspecting whether a variation  $\langle RA \rangle$  among the plurality of plasma processing units defined by a first equation below is within a first predetermined range:

$$\langle RA \rangle = (RA_{\max} - RA_{\min}) / (RA_{\max} + RA_{\min})$$

where  $RA_{\max}$  and  $RA_{\min}$  are maximum and minimum values, respectively, of AC resistances RA in the matching circuits of the plurality of plasma processing units measured from an input-terminal-side of the matching circuits; and

inspecting whether a variation  $\langle RB \rangle$  among the plurality of plasma processing units defined by a second equation below is within a second predetermined range:

$$\langle RB \rangle = (RB_{\max} - RB_{\min}) / (RB_{\max} + RB_{\min})$$

where  $RB_{\max}$  and  $RB_{\min}$  are maximum and minimum values, respectively, of AC resistances RB in the matching circuits of the plurality of plasma processing units measured from an output-terminal-side of the matching circuits.

35. (Original) The inspection method for a plasma processing system according to Claim 34, wherein the matching circuit is disconnected from the plasma processing unit at the output terminal and at the input terminal, and the AC resistance RA is measured at a first measuring point corresponding to the input terminal.

36. (Original) The inspection method for a plasma processing system

according to Claim 34, the plasma processing unit further comprising a radiofrequency supplier disposed between the radiofrequency generator and the input terminal of the matching circuit,

wherein the matching circuit is disconnected from the plasma processing unit at the output terminal and at an input end of the radiofrequency supplier, and the AC resistance RA is measured at a second measuring point corresponding to the input end of the radiofrequency supplier.

37. (Original) The inspection method for a plasma processing system according to Claim 34, wherein the matching circuit is disconnected from the plasma processing unit at the input terminal and at the output terminal of the matching circuit, and the AC resistance RB is measured at a third measuring point corresponding to the output terminal.

38. (Original) The inspection method for a plasma processing system according to Claim 34, the plasma processing unit further comprising a radiofrequency feeder disposed between the output terminal of the matching circuit and the electrode,

wherein the matching circuit is disconnected from the plasma processing unit at the input terminal of the matching circuit and at an output end of the radiofrequency feeder, and the AC resistance RB is measured at a fourth measuring point corresponding to the output end of the radiofrequency feeder.

39. (Original) The inspection method for a plasma processing system according to Claim 34, wherein the AC resistances RA and RB are values measured at a power frequency of the radiofrequency generator.

40. (Original) The inspection method for a plasma processing system

according to Claim 34, wherein both the first and second predetermined ranges are less than 0.5.

41. (Original) The inspection method for a plasma processing system according to Claim 40, wherein both the first and second predetermined ranges are less than 0.4.

42. (Original) The inspection method for a plasma processing system according to Claim 34, the matching circuit further comprising at least one connection point to connect the matching circuit to the ground potential portion, wherein the AC resistances  $R_A$  and  $R_B$  are measured for each of the connection points by sequentially switching the connection points so that only one of the connection points is connected to the ground potential portion.